Working with Luis Alvarez
APS Forum on History of Physics
May 3, 2011 (Alvarez' 100th Birthday)
Anaheim CA

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Discovering Alvarez

Selected Works of Luis W. Alvarez, with Commentary by His Students and Colleagues

EDITED BY

W. Peter Trower

RECENT DEVELOPMENTS IN PARTICLE PHYSICS

by

LUIS W. ALVAREZ

The Lawrence Radiation Laboratory Berkeley, California

Nobel Lecture, December 11, 1968

When I received my B. S. degree in 1932, only two of the fundamental particles of physics were known. Every bit of matter in the universe was thought to consist solely of protons and electrons. But in that same year, the number of particles was suddenly doubled. In two beautiful experiments, Chadwick showed that the neutron existed, (1) and Anderson photographed the first unmistakable positron track. (2) In the years since 1932, the list of known particles has increased rapidly, but not steadily. The growth has instead been concentrated into a series of spurts of activity.

Following the traditions of this occasion, my task this afternoon is to describe the latest of these periods of discovery, and to tell you of the development of the tools and techniques that made it possible. Most of us who become experimental physicists do so for two reasons; we love the tools of physics because to us they have intrinsic beauty, and we dream of finding new secrets of

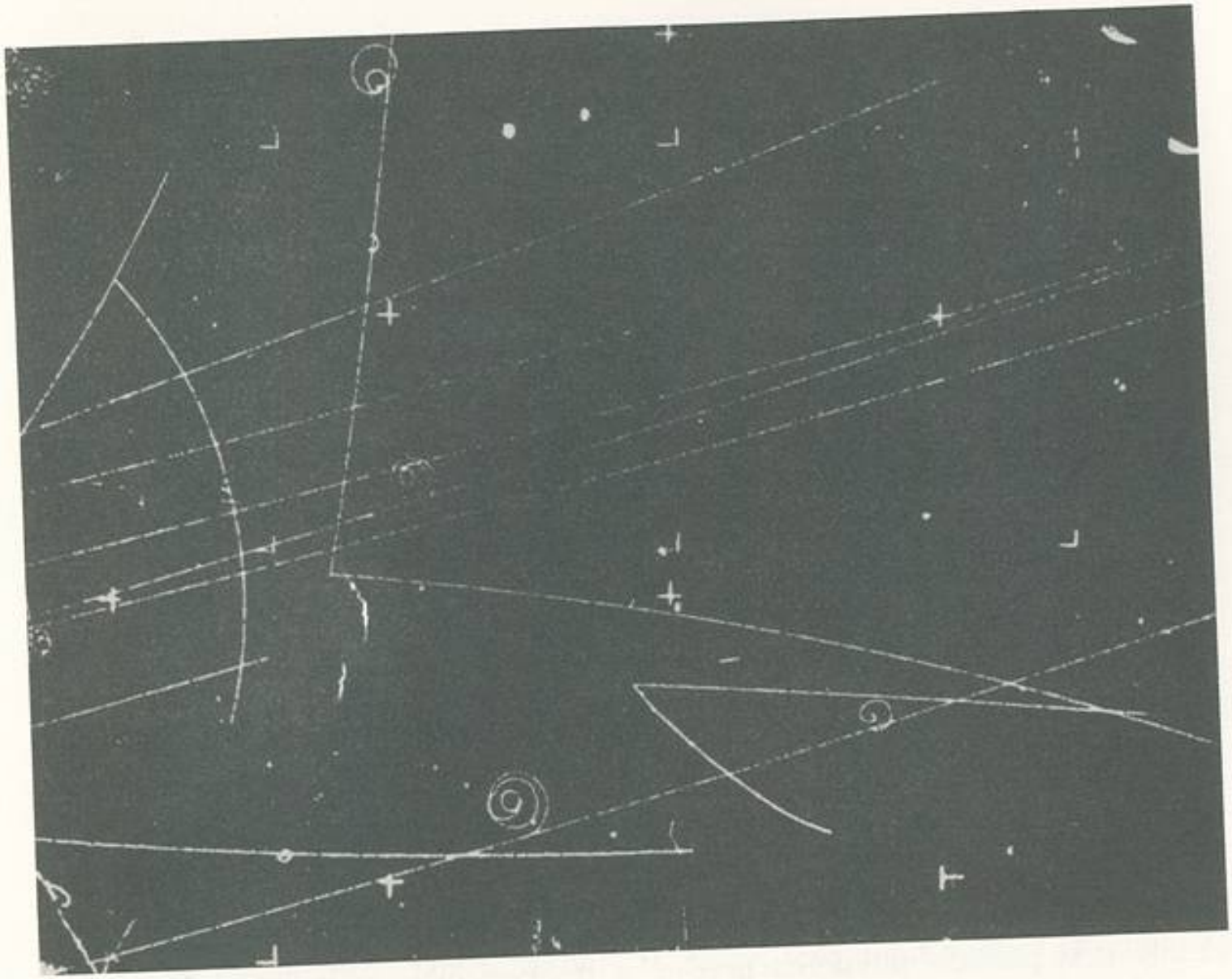

Fig. 1.
Caption: $\pi^- + p \rightarrow K^0 + \Lambda$.

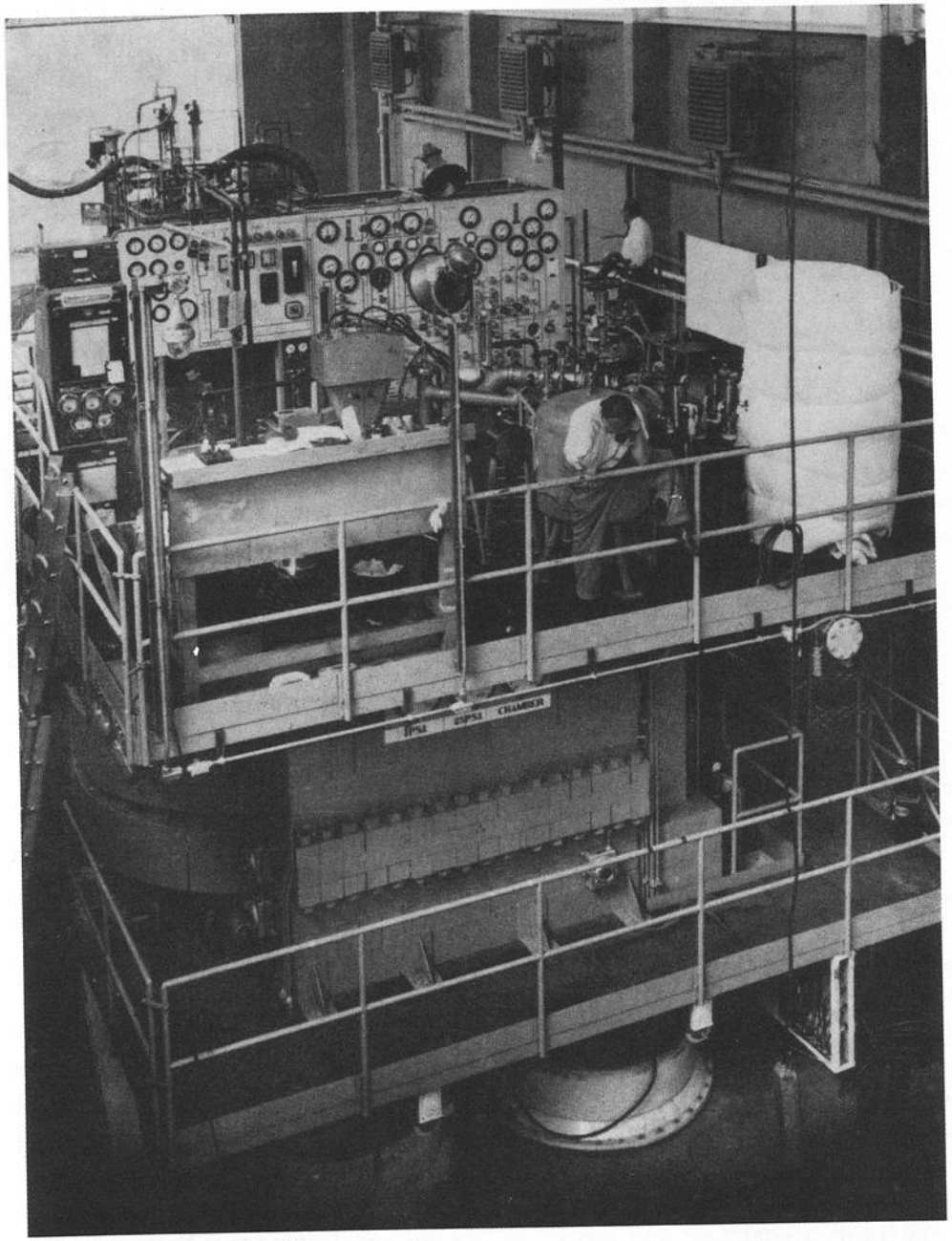

Fig. 7.
72 inch bubble chamber in its building.

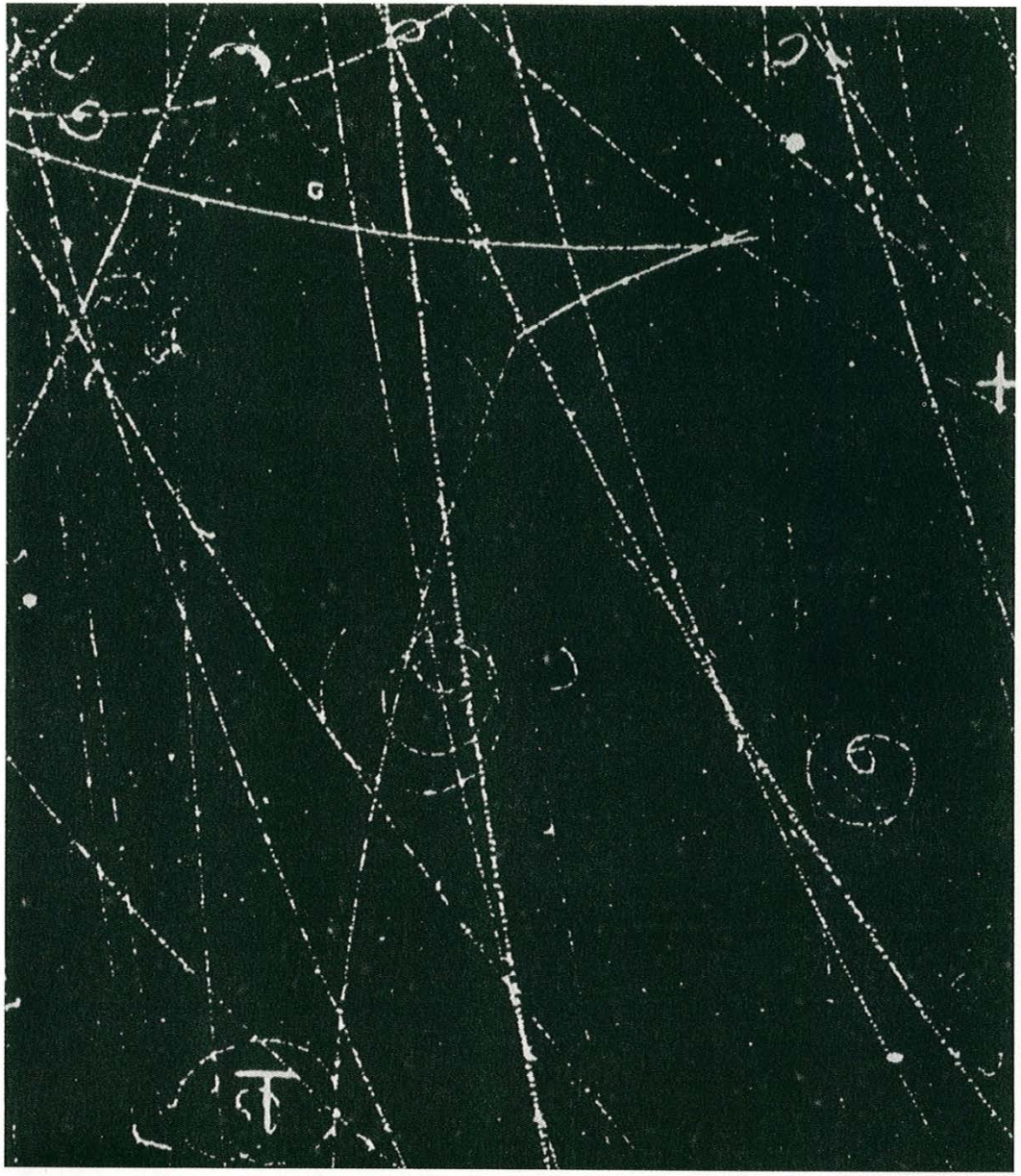

Fig. 10.
Muon Catalysis (with gap).

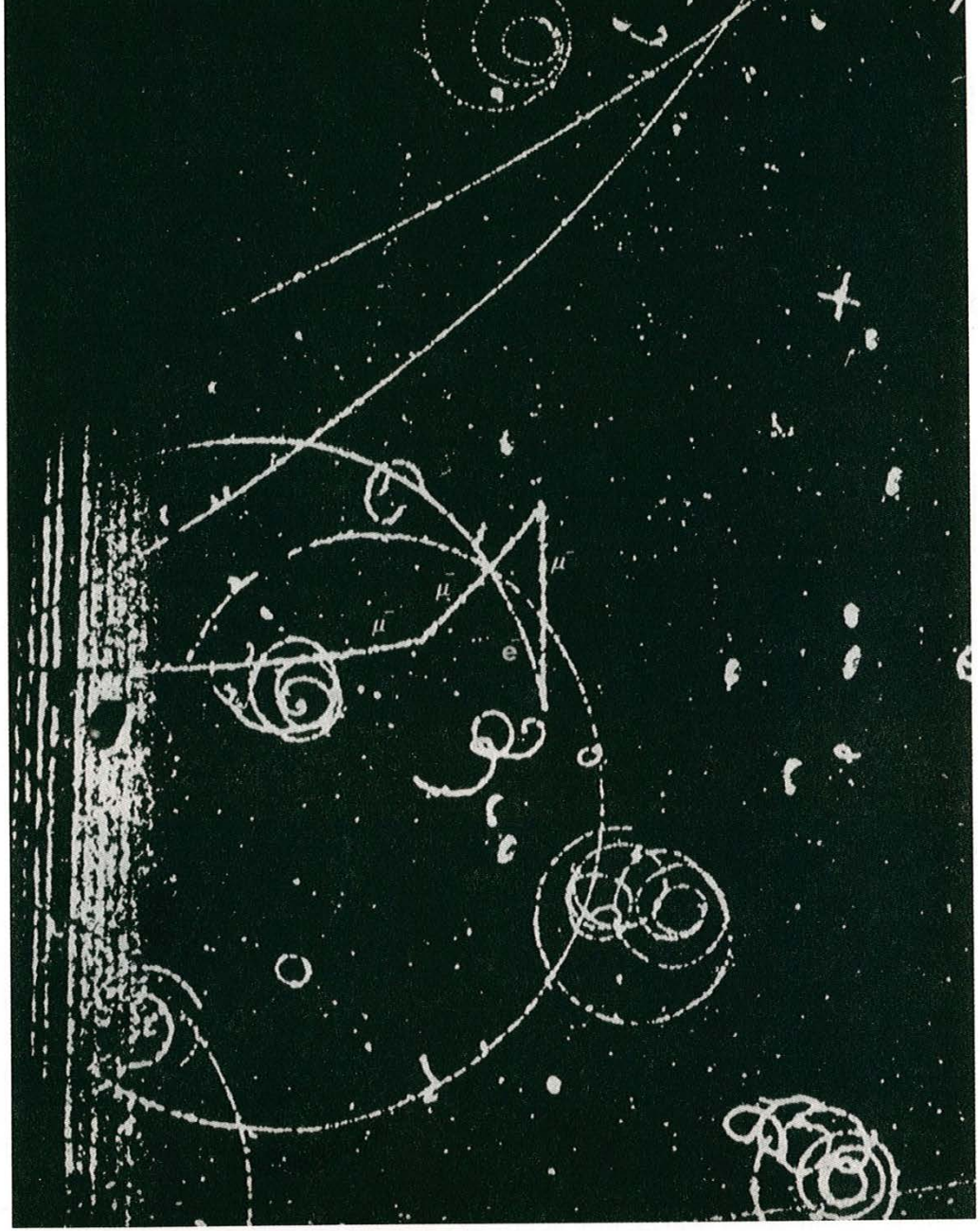

Fig. 11.
Double Muon Catalysis.

- A physicist examines the Kennedy assassination film
- Luis W. Alvarez
- American Journal of Physics -- September 1976 -- Volume 44, Issue 9, pp. 813 | Cited **4** times
- Full Text: | Download PDF

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- Show Abstract
- The motion picture film of the Kennedy assassination taken by Abraham Zapruder was one of the most important exhibits examined by the Warren Commission. The author uses the tools of the physicist to draw some conclusions that escaped the notice of the Commission and its expert FBI photointerpreters. Among the subjects treated are (1) the timing of the gun shots, (2) a theoretical and experimental investigation of the ''backward snap'' of the President's head immediately after he was killed—yielding the surprising result that it was consistent with a shot fired from the rear, (3) the speed at which the camera was running, and (4) a previously undetected deceleration of the President's automobile just before the final shot. The emphasis throughout is not on the assassination but rather on the application of elementary physics principles to the solution of practical problems.